



U.S. Department
of Transportation
Federal Aviation
Administration

7110.65M CHG 2
1/25/01

BRIEFING GUIDE



**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

Table of Contents

Paragraph Number	Title	Page
1-2-6	ABBREVIATIONS	3
2-1-5	EXPEDITIOUS COMPLIANCE	10
2-1-10	NAVAID MALFUNCTIONS	10
2-6-4	WEATHER AND CHAFF SERVICES	4
2-9-2	OPERATING PROCEDURES	11
2-9-3	CONTENT	12
3-1-6	TRAFFIC INFORMATION	6
3-6-1	EQUIPMENT USAGE	12
3-6-2	INFORMATION USAGE	13
3-6-3	IDENTIFICATION	13
3-6-4	AMASS ALERT RESPONSE	13
3-7-5	PRECISION APPROACH CRITICAL AREA	14
3-9-4	TAXI INTO POSITION AND HOLD (TIPH)	15
3-9-7	WAKE TURBULENCE SEPARATION FOR INTERSECTION DEPARTURES	15
3-9-10	CANCELLATION OF TAKEOFF CLEARANCE	6
3-10-7	LANDING CLEARANCE WITHOUT VISUAL OBSERVATION	6
3-10-9	RUNWAY EXITING	16
4-3-9	FORWARDING DEPARTURE TIMES	7
4-5-7	ALTITUDE INFORMATION	17
4-6-4	HOLDING INSTRUCTIONS	17
4-7-11	ARRIVAL INFORMATION BY APPROACH CONTROL FACILITIES	7
5-1-2	ALIGNMENT CHECK (ALIGNMENT ACCURACY CHECK)	18
5-1-3	RADAR USE	8
5-2-2	DISCRETE ENVIRONMENT	9
5-2-13	CODE MONITOR	9
5-5-2	TARGET SEPARATION	18
5-5-3	MINIMA (TARGET RESOLUTION)	19, 21
5-5-4	MINIMA	19
7-2-1	VISUAL SEPARATION	21
7-4-3	CLEARANCE FOR VISUAL APPROACH	22
8-5-4	SAME DIRECTION	23
9-4-2	SEPARATION MINIMA	24
9-4-3	VFR-ON-TOP	25
Appendix B	AIRCRAFT INFORMATION HELICOPTERS/ROTORCRAFTS	26

1. PARAGRAPH NUMBER AND TITLE: 1-2-6. ABBREVIATIONS; 2-6-4. WEATHER AND CHAFF SERVICES; 3-1-6. TRAFFIC INFORMATION; 3-9-10. CANCELLATION OF TAKEOFF CLEARANCE; 3-10-7. LANDING CLEARANCE WITHOUT VISUAL OBSERVATION; 4-3-9. FORWARDING DEPARTURE TIMES; 4-7-11. ARRIVAL INFORMATION BY APPROACH CONTROL FACILITIES; 5-1-3. RADAR USE; 5-2-2. DISCRETE ENVIRONMENT; and 5-2-13. CODE MONITOR

2. BACKGROUND: Due to the advent of new terminal automation systems, such as Standard Terminal Automation Replacement System (STARS) and ARTS Color Display (ACD), numerous editorial changes, abbreviations, and new procedures are required.

3. CHANGE:

OLD

1-2-6. ABBREVIATIONS

<i>Abbreviations</i>	<i>Meaning</i>
Add	Add
AMB	Ambiguity-A disparity greater than 2 miles exists between the position declared for a target by <u>ARTS</u> and another facility's computer declared position during interfacility handoff
Add	Add
Add	Add
Add	Add
Add	Add
Add	Add
Add	Add

TBL 1-2-1

NEW

1-2-6. ABBREVIATIONS

<i>Abbreviations</i>	<i>Meaning</i>
<u>AMASS</u>	<u>Airport Movement Area Safety System</u>
AMB	Ambiguity - A disparity greater than 2 miles exists between the position declared for a target by <u>ATTS</u> and another facility's computer declared position during interfacility handoff
<u>ARTS</u>	<u>Automated Radar Tracking System</u>
<u>ATTS</u>	<u>Automated Terminal Tracking Systems</u>
<u>CPME</u>	<u>Calibration Performance Monitor Equipment</u>
<u>CTRD</u>	<u>Certified Tower Radar Display</u>
<u>EDCT</u>	<u>Expect Departure Clearance Time</u>
<u>M-EARTS</u>	<u>Micro-En Route Automated Radar Tracking System</u>
<u>RTOC</u>	<u>Real-Time Quality Control</u>

TBL 1-2-1

OLD**2-6-4. WEATHER AND CHAFF SERVICES**

a. Issue pertinent information on observed/ reported weather or chaff areas. Provide radar navigational guidance and/or approve deviations around weather or chaff areas when requested by the pilot. Do not use the word "turbulence" in describing radar-derived weather.

1. Issue weather and chaff information by defining the area of coverage in terms of azimuth (by referring to the 12-hour clock) and distance from the aircraft or by indicating the general width of the area and the area of coverage in terms of fixes or distance and direction from fixes.

2. Issue the level of echo intensity when that information is available. When utilizing ASR-9 radar equipment, controllers shall ensure that the highest available level of echo intensity within their area of jurisdiction is displayed.

Add

3. When a deviation cannot be approved as requested and the situation permits, suggest an alternative course of action.

b. In areas of significant weather, plan ahead and be prepared to suggest, upon pilot request, the use of alternative routes/altitudes.

NOTE-

Weather significant to the safety of aircraft includes such conditions as tornadoes, lines of thunderstorms, embedded thunderstorms, large hail, wind shear, moderate to extreme turbulence (including CAT), and light to severe icing.

c. Inform any tower for which you provide approach control services if you observe any weather echoes on radar which might affect their operations.

PHRASEOLOGY-

WEATHER/CHAFF AREA BETWEEN (number) O'CLOCK AND (number) O'CLOCK (number) MILES,

or

(number) MILE BAND OF WEATHER/CHAFF FROM (fix or number of miles and direction from fix) TO (fix or number of miles and direction from fix),

or

NEW**2-6-4. WEATHER AND CHAFF SERVICES**

No Change

No Change

2. Issue the level of echo intensity when that information is available.

3. When equipment limitations exist, controllers shall, at a minimum, ensure that the highest available level of echo intensity within their area of jurisdiction is displayed.

4. When a deviation cannot be approved as requested and the situation permits, suggest an alternative course of action.

No Change

No Change

No Change

PHRASEOLOGY-

No Change

No Change

LEVEL (number) WEATHER ECHO BETWEEN (number) O'CLOCK AND (number) O'CLOCK, (number) MILES. MOVING (direction) AT (number) KNOTS, TOPS (altitude),

or

DEVIATION APPROVED, (restrictions if necessary), ADVISE WHEN ABLE TO:

RETURN TO COURSE,

or

RESUME OWN NAVIGATION

or

FLY HEADING (heading)

or

PROCEED DIRECT TO (name of NAVAID).

UNABLE DEVIATION (state possible alternate course of action).

EXAMPLE-

1. "Level five weather echo between eleven o'clock and one o'clock, one zero miles. Moving east at two zero knots, tops flight level three niner zero."

2. "Level four weather echo between ten o'clock and two o'clock, one five miles. Weather area is two five miles in diameter."

Add

Add

NOTE-

Phraseology using level number is only applicable when the radar weather echo intensity information is determined by NWS radar equipment or ASR-9 radar equipment.

REFERENCE-

P/CG Term- Radar Weather Echo Intensity Levels.

d. The supervisory traffic management coordinator-in-charge/operations supervisor/controller-in-charge shall verify the ASR-9 weather information by the best means available (e.g., pilot reports, local tower personnel, etc.) if the weather data displayed by the ASR-9 is reported as questionable or erroneous. Errors in weather radar presentation shall be reported to the AF technician and the AT supervisor shall determine if the ASR-9 derived weather data is to be displayed and a NOTAM distributed.

LEVEL (number(s)) WEATHER ECHO BETWEEN (number) O'CLOCK AND (number) O'CLOCK, (number) MILES. MOVING (direction) AT (number) KNOTS, TOPS (altitude),

No Change

No Change

No Change

No Change

EXAMPLE-

No Change

No Change

3. "Level four and five weather echoes between ten o'clock and two o'clock, one five miles. Weather area is two five miles in diameter."

4. "Level two through four weather echoes between ten o'clock and two o'clock, one five miles. Weather area is two five miles in diameter."

NOTE-

Phraseology using level number(s) is only applicable when the radar weather echo intensity information is determined by NWS radar equipment or digitized radar equipment.

No Change

d. The supervisory traffic management coordinator-in-charge/operations supervisor/controller-in-charge shall verify the digitized radar weather information by the best means available (e.g., pilot reports, local tower personnel, etc.) if the weather data displayed by digitized radar is reported as questionable or erroneous. Errors in weather radar presentation shall be reported to the AF technician and the AT supervisor shall determine if the digitized radar derived weather data is to be displayed and a NOTAM distributed.

OLD**3-1-6. TRAFFIC INFORMATION**a through b **EXAMPLE**

c. When using a certified tower radar display, you may issue traffic advisories using the standard radar phraseology prescribed in para 2-1-21, Traffic Advisories.

NEW**3-1-6. TRAFFIC INFORMATION**

No Change

c. When using a CTRD, you may issue traffic advisories using the standard radar phraseology prescribed in para 2-1-21, Traffic Advisories.

OLD**3-9-10. CANCELLATION OF TAKEOFF CLEARANCE**

Cancel a previously issued clearance for takeoff and inform the pilot of the reason if circumstances require. Once an aircraft has started takeoff roll, cancel the takeoff clearance only for the purpose of safety.

NOTE-

In no case should a takeoff clearance be canceled after an aircraft has started its takeoff roll solely for the purpose of meeting traffic management requirements/EDC times.

NEW**3-9-10. CANCELLATION OF TAKEOFF CLEARANCE**

No Change

NOTE-

In no case should a takeoff clearance be canceled after an aircraft has started its takeoff roll solely for the purpose of meeting traffic management requirements/EDCT.

OLD**3-10-7. LANDING CLEARANCE WITHOUT VISUAL OBSERVATION**

When an arriving aircraft reports at a position where he/she should be seen but has not been visually observed, advise the aircraft as a part of the landing clearance that it is not in sight and restate the landing runway.

PHRASEOLOGY-

NOT IN SIGHT, RUNWAY (number) CLEARED TO LAND.

NOTE-

Aircraft observance on the BRITE/DBRITE/TDW display satisfies the visually observed requirement.

NEW**3-10-7. LANDING CLEARANCE WITHOUT VISUAL OBSERVATION**

No Change

No Change

NOTE-

Aircraft observance on the CTRD satisfies the visually observed requirement.

OLD**4-3-9. FORWARDING DEPARTURE TIMES****TERMINAL**

Unless alternate procedures are prescribed in a letter of agreement or automatic departure messages are being transmitted between automated facilities, forward departure times to the facility from which you received the clearance and also to the terminal departure controller when that position is involved in the departure sequence.

NOTE-

1. Letters of agreement prescribing assumed departure times or mandatory radar handoff procedures are alternatives for providing equivalent procedures.

2. The letters "DM" flashing in field 4 of the full data block signify unsuccessful transmission of an automatic departure message.

NEW**4-3-9. FORWARDING DEPARTURE TIMES**

No Change

No Change

2. The letters "DM" flashing in the data block signify unsuccessful transmission of a departure message.

OLD**4-7-11. ARRIVAL INFORMATION BY APPROACH CONTROL FACILITIES****Title through a6 NOTE**

b. Forward the following information to the tower when the tower and TRACON are part of the same facility:

1. Aircraft identification.
2. Type aircraft if required for separation purposes.
3. Type of instrument approach procedure and/or runway if differing from that in use.

NOTE-

The local controller has the responsibility to determine whether or not conditions are adequate for the use of ARTS/STARS data on the BRITE/DBRITE/TDW where a facility directive authorizes its use for the transfer of arrival data.

REFERENCE-

FAAO 7210.3, Use of ARTS Modify and Quick Look Functions, Para 11-2-4.

FAAO 7210.3, Use of STARS Quick Look Functions, Para 11-8-4.

NEW**4-7-11. ARRIVAL INFORMATION BY APPROACH CONTROL FACILITIES**

No Change

No Change

No Change

No Change

No Change

NOTE-

The local controller has the responsibility to determine whether or not conditions are adequate for the use of ATTS data on the CTRD where a facility directive authorizes its use for the transfer of arrival data.

REFERENCE-

FAAO 7210.3, Use of Modify and Quick Look Functions, Para 11-2-4.

No Change

c. Where the collocated or satellite tower has ARTS/STARS data displayed on its BRITE/DBRITE/TDW, the ARTS/STARS modify or quick look functions may be used to forward arrival data provided that a facility directive at the collocated tower or a letter of agreement with the satellite tower exists which outlines procedures for using ARTS/STARS for transferring this data.

c. Where the collocated or satellite tower has ATIS data displayed on its CTRD, the ATIS modify or quick look functions may be used to forward arrival data provided that a facility directive at the collocated tower or a letter of agreement with the satellite tower exists which outlines procedures for using ATIS for transferring this data.

OLD

5-1-3. RADAR USE

Use radar information derived from primary and Mode 3/A secondary radar systems.

REFERENCE-

FAAO 7110.65, *Beacon Range Accuracy, Para 5-1-4.*
FAAO 7110.65, *Inoperative or Malfunctioning Interrogator, Para 5-2-15.*

a. Secondary radar may be used as the sole display source as follows:

1. In Class A airspace.

REFERENCE-

FAAO 7110.65, *Failed Transponder in Class A Airspace, Para 5-2-16.*
14 CFR Section 91.135, *Operations in Class A Airspace.*

2. Outside Class A airspace, or where mix of Class A airspace/non-Class A airspace exists, only when:

(a) Additional coverage is provided by secondary radar beyond that of the primary radar.

(b) The primary radar is temporarily unusable or out of service. Advise pilots when these conditions exist.

PHRASEOLOGY-

PRIMARY RADAR OUT OF SERVICE. RADAR TRAFFIC ADVISORIES AVAILABLE ON TRANSPONDER AIRCRAFT ONLY.

NOTE-

1. Advisory may be omitted when provided on ATIS and pilot indicates having ATIS information.

2. Advisory may be omitted in the en route environment when there is overlapping primary radar coverage from multiple radar sites.

(c) EN ROUTE. A secondary radar system is the only source of radar data for the area of service. When the system is used for separation, beacon range accuracy is assured, as provided in para 5-1-4, Beacon Range Accuracy.

NEW

5-1-3. RADAR USE

Use radar information derived from primary and secondary radar systems.

No Change

No Change

No Change

No Change

No Change

No Change

No Change

No Change

No Change

2. Advisory may be omitted when there is overlapping primary radar coverage from multiple radar sites.

(c) A secondary radar system is the only source of radar data for the area of service. When the system is used for separation, beacon range accuracy is assured, as provided in para 5-1-4, Beacon Range Accuracy.

NOTE-

This provision is to authorize secondary radar only operations where there is no primary radar available and the condition is not temporary.

Add

b. **TERMINAL**. Do not use only secondary radar to conduct surveillance (ASR) final approaches unless an emergency exists and the pilot concurs.

OLD**5-2-2. DISCRETE ENVIRONMENT**

a. Issue discrete beacon codes assigned by the computer. Computer-assigned codes may be modified as required.

1. **TERMINAL**. Aircraft that will remain within the terminal facility's delegated airspace shall be assigned a code from the code subset allocated to the terminal facility.

2. **TERMINAL**. Unless otherwise specified in a facility directive or a letter of agreement, aircraft that will enter an adjacent **ARTS/STARS** facility's delegated airspace shall be assigned a beacon code assigned by the ARTCC computer.

OLD**5-2-13. CODE MONITOR**

Continuously monitor the Mode 3/A radar beacon codes assigned for use by aircraft operating within your area of responsibility when nonautomated beacon decoding equipment (e.g., 10-channel decoder) is used to display the target symbol.

REFERENCE-

FAAO 7110.65, Function Code Assignments, Para 5-2-6.

NOTE-

*In addition to alphanumeric and control symbology processing enhancements, the **ARTS, EARTS**, and the TPX-42 systems are equipped with automatic beacon decoders. Therefore, in facilities where the automatic beacon decoders are providing the control slash video, there is no requirement to have the nonautomated decoding equipment operating simultaneously.*

4. OPERATIONAL IMPACT: None.

NOTE-

1. This provision is to authorize secondary radar only operations where there is no primary radar available and the condition is not temporary.

2. Since Terminal facilities use Long Range Radar, this is applicable to En Route and Terminal Radar Facilities.

b. **TERMINAL**. Do not use secondary radar to conduct surveillance (ASR) final approaches unless the system is fully digitized, or an emergency exists and the pilot concurs.

NEW**5-2-2. DISCRETE ENVIRONMENT**

No Change

No Change

2. **TERMINAL**. Unless otherwise specified in a facility directive or a letter of agreement, aircraft that will enter an adjacent **ATTIS** facility's delegated airspace shall be assigned a beacon code assigned by the ARTCC computer.

NEW**5-2-13. CODE MONITOR**

No Change

No Change

NOTE-

*In addition to alphanumeric and control symbology processing enhancements, the **M-EARTS, STARS**, and the TPX-42 systems are equipped with automatic beacon decoders. Therefore, in facilities where the automatic beacon decoders are providing the control slash video, there is no requirement to have the nonautomated decoding equipment operating simultaneously.*

1. PARAGRAPH NUMBER AND TITLE: 2-1-5. EXPEDITIOUS COMPLIANCE

2. BACKGROUND: The Air Traffic Procedures Advisory Committee (ATPAC) identified this as an area of concern.

3. CHANGE:**OLD****2-1-5. EXPEDITIOUS COMPLIANCE**

a. Use the word "immediately" only when expeditious compliance is required to avoid an imminent situation.

b. Use the word "expedite" only when prompt compliance is required to avoid the development of an imminent situation.

c. In either case, if time permits, include the reason for this action.

NEW**2-1-5. EXPEDITIOUS COMPLIANCE**

No Change

b. Use the word "expedite" only when prompt compliance is required to avoid the development of an imminent situation. If an "expedite" climb or descent clearance is issued by ATC, and subsequently the altitude to maintain is changed or restated without an expedite instruction, the expedite instruction is canceled.

No Change

4. OPERATIONAL IMPACT: Minimal.**1. PARAGRAPH NUMBER AND TITLE: 2-1-10. NAVAID MALFUNCTIONS**

2. BACKGROUND: Recent events concerning GPS anomalies dictate the need for procedures to report such events. These procedures evolve as the system matures. Information gathering identifies new situations and new dimensions of outage areas.

3. CHANGE:**OLD****2-1-10. NAVAID MALFUNCTIONS**

a1 through a5

b. When an aircraft reports a GPS/GNSS anomaly, request the following information and/or take the following actions:

1. Date and time of the occurrence.

2. Location of anomaly.

3. Altitude.

4. Aircraft type and call sign.

5. GPS receiver (make and model) or FMS that uses GPS sensors.

6. Aircraft attitude.

7. Other information.

8. Attempt to identify other GPS aircraft in the area experiencing the anomaly.

NEW**2-1-10. NAVAID MALFUNCTIONS**

No Change

b. When an aircraft reports a GPS/GNSS anomaly, request the following information and/or take the following actions:

Delete

Delete

Delete

Delete

Delete

Delete

Delete

Delete

9. Forward this information to the local AF personnel.

Delete

10. Broadcast the anomaly report to other aircraft as necessary.

Delete

Add

Add

Add

Add

Add

Add

Add

1. Record the following minimum information:

(a) Aircraft call sign.

(b) Location.

(c) Altitude.

(d) Date/time of occurrence.

2. Direct the aircraft to file a complete report with AESS/ESS.

3. Broadcast the anomaly report to other aircraft as necessary.

Delete

NOTE-

1-4 are considered essential information. Obtain 5-7 whenever possible. Actions 8-10 are mandatory.

4. OPERATIONAL IMPACT: This change realigns GPS reporting procedures.

1. PARAGRAPH NUMBER AND TITLE: 2-9-2. OPERATING PROCEDURES and 2-9-3. CONTENT

2. BACKGROUND: References to weather in these paragraphs are not in accordance with the METAR format. These are editorial changes to eliminate the possibility of confusion.

3. CHANGE:

OLD

2-9-2. OPERATING PROCEDURES

Title through c

d. Controllers shall ensure that pilots receive the most current pertinent information. Ask the pilot to confirm receipt of the current ATIS information if the pilot does not initially state the appropriate ATIS code. Controllers shall ensure that changes to pertinent operational information is provided after the initial confirmation of ATIS information is established. Issue the current weather, runway in use, approach information, and pertinent NOTAM's to pilots who are unable to receive the ATIS.

EXAMPLE-

"Verify you have information ALPHA."

"Information BRAVO now current, visibility three miles."

"Information CHARLIE now current, Measured Ceiling 1500 Broken."

NEW

2-9-2. OPERATING PROCEDURES

No Change

No Change

EXAMPLE-

No Change

No Change

"Information CHARLIE now current, Ceiling 1500 Broken."

OLD**2-9-3. CONTENT**

Include the following in ATIS broadcast as appropriate:

a. Airport/facility name, phonetic letter code, time of weather sequence (UTC). Weather information consisting of ceiling, visibility, obstructions to vision, temperature, dew point, wind direction and velocity, altimeter, a density altitude advisory when appropriate, and other pertinent remarks included in the official weather observation. Wind direction, velocity, and altimeter shall be reported from certified direct reading instruments. Temperature and dew point should be reported from certified direct reading sensors when available. Always include weather observation remarks of lightning, cumulonimbus, and towering cumulus clouds.

NEW**2-9-3. CONTENT**

Include the following in ATIS broadcast as appropriate:

a. Airport/facility name, phonetic letter code, time of weather sequence (UTC). Weather information consisting of wind direction and velocity, visibility, obstructions to vision, present weather, sky condition, temperature, dew point, altimeter, a density altitude advisory when appropriate and other pertinent remarks included in the official weather observation. Wind direction, velocity, and altimeter shall be reported from certified direct reading instruments. Temperature and dew point should be reported from certified direct reading sensors when available. Always include weather observation remarks of lightning, cumulonimbus, and towering cumulus clouds.

4. OPERATIONAL IMPACT: Minimal.**1. PARAGRAPH NUMBER AND TITLE: 3-6-1. EQUIPMENT USAGE**

2. BACKGROUND: Development of the Airport Movement Area Safety System (AMASS) and its integration into current airport surface detection equipment (ASDE) requires procedural changes for air traffic personnel.

3. CHANGE:**OLD****3-6-1. EQUIPMENT USAGE**

Use ASDE to augment visual observation of aircraft and/or vehicular movements on runways and taxiways, or other areas of the movement area:

a. When visibility is less than the most distant point in the active movement area, and

b. When, in your judgment, its use will assist you in the performance of your duties at any time,

c. ASDE-3 shall be operated continuously between sunset and sunrise regardless of visibility.

NEW**3-6-1. EQUIPMENT USAGE**

a. ASDE/AMASS shall be operated continuously to augment visual observation of aircraft landing or departing, and aircraft or vehicular movements on runways and taxiways, or other areas of the movement area.

Delete

b. The operational status of ASDE/AMASS shall be determined during the relief briefing, or as soon as possible after assuming responsibility for the associated control position.

Delete

4. OPERATIONAL IMPACT: Operations are enhanced through use of ASDE/AMASS on a continuous basis.

1. PARAGRAPH NUMBER AND TITLE: 3-6-2. INFORMATION USAGE; 3-6-3. IDENTIFICATION; and 3-6-4. AMASS ALERT RESPONSES

2. BACKGROUND: Development of the Airport Movement Area Safety System (AMASS) and its integration into current airport surface detection equipment (ASDE) requires procedural changes for air traffic personnel.

3. CHANGE:

OLD

3-6-2. INFORMATION USAGE

a. Use ASDE derived information to assist with:

1. Formulating clearances and control instructions to aircraft and vehicles on the movement area.

2. Determining when the runway is clear of aircraft and vehicles prior to a landing or departure.

REFERENCE-

FAAO 7210.3, Radar Use, Para 3-7-2.

3. Positioning aircraft and vehicles using the movement area.

4. Determining the exact location of aircraft and vehicles, or spatial relationship to other aircraft/vehicles on the movement area.

5. Monitoring compliance with control instructions by aircraft and vehicles on taxiways and runways.

6. Confirming pilot reported positions.

7. Providing directional taxi information on pilot request.

NEW

3-6-2. INFORMATION USAGE

a. ASDE/AMASS derived information may be used to:

1. Formulate clearances and control instructions to aircraft.

2. Formulate control instructions to vehicles on the movement area.

REFERENCE-

FAAO 7210.3, Radar Use, Para 3-7-2**b2**.

3. Position aircraft and vehicles using the movement area.

4. Determining the exact location of aircraft and vehicles, or spatial relationship to other aircraft/vehicles on the movement area.

5. Monitor compliance with control instructions by aircraft and vehicles on taxiways and runways.

6. Confirm pilot reported positions.

7. Provide directional taxi information, as appropriate.

OLD

3-6-3. IDENTIFICATION

To identify an observed target on the ASDE display, correlate its position with one or more of the following:

a. Pilot's report.

NEW

3-6-3. IDENTIFICATION

To identify an observed target on the ASDE/AMASS display, correlate its position with one or more of the following:

a. Pilot position report.

OLD**NEW**

Add

3-6-4. AMASS ALERT RESPONSES

Add

When the system alarms, the controller shall immediately assess the situation visually and as presented on the ASDE/AMASS display, then take appropriate action, as follows:

Add

a. When an arrival aircraft (still airborne, prior to the landing threshold) activates an alarm, the controller shall issue go-around instructions. (Exception: Alarms involving known formation flights, as they cross the landing threshold, may be disregarded if all other factors are acceptable.)

Add

b. For other AMASS alarms, issue instructions/clearances based on good judgment and evaluation of the situation at hand.

4. OPERATIONAL IMPACT: None.**1. PARAGRAPH NUMBER AND TITLE: 3-7-5. PRECISION APPROACH CRITICAL AREA**

2. BACKGROUND: This change clarifies the intent of FAAO 7110.65M, paragraph 3-7-5. This paragraph requires that access to the ILS/MLS critical area must be controlled to ensure the integrity of the ILS/MLS course signals whenever conditions are "less than reported ceiling 800 feet and/or visibility less than 2 miles."

3. CHANGE:**OLD****NEW****3-7-5. PRECISION APPROACH CRITICAL AREA****3-7-5. PRECISION APPROACH CRITICAL AREA**Title through a ***PHRASEOLOGY-***

No Change

1. LOCALIZER CRITICAL AREA**1. LOCALIZER CRITICAL AREA**

(a) Do not authorize vehicle or aircraft operations in or over the area when an arriving aircraft is inside the ILS OM or the fix used in lieu of the OM when conditions are less than reported ceiling 800 feet and/or visibility 2 miles, except:

(a) Do not authorize vehicle or aircraft operations in or over the area when an arriving aircraft is inside the ILS OM or the fix used in lieu of the OM when conditions are less than reported ceiling 800 feet and/or visibility less than 2 miles, except:

4. OPERATIONAL IMPACT: None.

1. PARAGRAPH NUMBER AND TITLE: 3-9-4. TAXI INTO POSITION AND HOLD (TIPH)

2. BACKGROUND: The National Transportation Safety Board (NTSB) has formally recommended to the FAA that we discontinue the practice of allowing departing aircraft to hold on active runways at nighttime or at any time when ceiling and visibility conditions preclude arriving aircraft from seeing traffic on the runway in time to initiate a safe go-around maneuver. As part of the recent Runway Safety National Summit, Administrator Garvey committed the FAA to modifying taxi into position and hold procedures.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
3-9-4. TAXI INTO POSITION AND HOLD (TIPH)	3-9-4. TAXI INTO POSITION AND HOLD (TIPH)
a through d	No Change
Add	<u>e. Do not authorize an aircraft to taxi into position and hold when the departure point is not visible from the tower, unless the aircraft's position can be verified by ASDE or the runway is used for departures only.</u>
e through h	Reletter f through i

4. OPERATIONAL IMPACT: None.**1. PARAGRAPH NUMBER AND TITLE: 3-9-7. WAKE TURBULENCE SEPARATION FOR INTERSECTION DEPARTURES**

2. BACKGROUND: There have been several interpretation requests on wake turbulence separation for intersection departures on parallel runways separated by less than 2,500 feet with runway thresholds offset by 500 feet or more. Currently, the paragraph could be interpreted to mean that parallel runways less than 2,500 feet apart are considered to be intersection departures regardless of offset or that the wake turbulence separation only applies if an aircraft is taking off from an actual intersection on the parallel runway. This change will clarify the application of wake turbulence separation for departures on parallel runways separated by less than 2,500 feet with runway thresholds offset by 500 feet or more.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
3-9-7. WAKE TURBULENCE SEPARATION FOR INTERSECTION DEPARTURES	3-9-7. WAKE TURBULENCE SEPARATION FOR INTERSECTION DEPARTURES
a. Apply the following wake turbulence criteria for intersection departures:	a. Apply the following wake turbulence criteria for intersection departures:
1. Separate a small aircraft taking off from an intersection on the same runway (same or opposite direction takeoff) behind a preceding departing large aircraft by ensuring that the small aircraft does not start takeoff roll until at least 3 minutes after the large aircraft has taken off.	1. Separate a small aircraft taking off from an intersection on the same runway (same or opposite direction takeoff) <u>or a parallel runway separated by less than 2,500 feet with runway thresholds offset by 500 feet or more</u> behind a preceding departing large aircraft by ensuring that the small aircraft does not start takeoff roll until at least 3 minutes after the large aircraft has taken off.

4. OPERATIONAL IMPACT: These changes shall be briefed to all operational personnel.

1. PARAGRAPH NUMBER AND TITLE: 3-10-9. RUNWAY EXITING

2. BACKGROUND: The Air Traffic Procedures Advisory Committee (ATPAC) identified this change as an area of concern due to the difference with pilots requirements to clear the applicable hold lines in order to be clear of the runway.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
3-10-9. RUNWAY EXITING	3-10-9. RUNWAY EXITING
Title through a Note	No Change
b. Taxi instructions shall be provided to the aircraft by the local controller when:	No Change
1. Compliance with ATC instructions will be required before the aircraft can change to ground control, or	No Change
2. The aircraft will be required to enter a taxiway/runway/ramp area, other than the one used to exit the landing runway, in order to taxi clear of the landing runway.	No Change
EXAMPLE- "U.S. Air Ten Forty Two, turn right next taxiway, cross taxiway Bravo, hold short of taxiway Charlie, contact ground point seven."	No Change
NOTE- 1. An aircraft is expected to taxi clear of the runway unless otherwise directed by ATC. Pilots shall not exit the landing runway on to an intersecting runway unless authorized by ATC. In the absence of ATC instructions, an aircraft should taxi clear of the landing runway even if that requires the aircraft to protrude into or enter another taxiway/ramp area. This does not authorize an aircraft to cross a subsequent taxiway or ramp after clearing the landing runway. 2. The pilot is responsible for ascertaining when the aircraft is clear of the runway.	NOTE- 1. An aircraft is expected to taxi clear of the runway unless otherwise directed by ATC. Pilots shall not exit the landing runway on to an intersecting runway unless authorized by ATC. In the absence of ATC instructions, an aircraft should taxi clear of the landing runway <u>by clearing the hold position marking associated with the landing runway</u> even if that requires the aircraft to protrude into or enter another taxiway/ramp area. This does not authorize an aircraft to cross a subsequent taxiway or ramp after clearing the landing runway. 2. The pilot is responsible for ascertaining when the aircraft is clear of the runway <u>by clearing the hold position marking associated with the landing runway.</u>
4. OPERATIONAL IMPACT: AXX-530 Branches should review with their Airport Managers, the applicable hold position lines, type aircraft arriving, length of taxiways, and what impact this may be to local procedures.	

1. PARAGRAPH NUMBER AND TITLE: 4-5-7. ALTITUDE INFORMATION

2. BACKGROUND: The Air Traffic Procedures Advisory Committee (ATPAC) identified this as an area of concern.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
4-5-7. ALTITUDE INFORMATION	4-5-7. ALTITUDE INFORMATION
Title through g PHRASEOLOGY	No Change
h. Instructions to vertically navigate on a STAR/FMPS with published restrictions.	No Change
PHRASEOLOGY- <i>DESCEND VIA (STAR/FMSP name and number).</i>	No Change
EXAMPLE- <i>"Descend via the Mudde One Arrival." "Cross JCT at flight level two four zero." "Descend via the Coast Two Arrival."</i>	EXAMPLE- <i>"Descend via the Mudde One Arrival." "Cross JCT at flight level two four zero, <u>then</u> <u>descend via the Coast Two Arrival.</u>"</i>

4. OPERATIONAL IMPACT: None.

1. PARAGRAPH NUMBER AND TITLE: 4-6-4. HOLDING INSTRUCTIONS

2. BACKGROUND: Unlike conventional ground-based NAVAID's, GPS does not provide a radial, course, bearing, azimuth or route. GPS generates a track between waypoints. GPS is approved for use as a supplemental means of navigation and for use in lieu of ADF or DME. Holding instructions require updating to capture the use of a "track."

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
4-6-4. HOLDING INSTRUCTIONS	4-6-4. HOLDING INSTRUCTIONS
When issuing holding instructions, specify:	No Change
a. Direction of holding from the fix.	a. Direction of holding from the fix/ <u>waypoint</u> .
b. Holding fix.	b. Holding fix <u>or waypoint</u> .
NOTE- <i>The holding fix may be omitted if included at the beginning of the transmission as the clearance limit.</i>	No Change
c. Radial, course, bearing, azimuth, airway, or route on which the aircraft is to hold.	c. Radial, course, bearing, <u>track</u> , azimuth, airway, or route on which the aircraft is to hold.
d. Leg length in miles if DME or RNAV is to be used. Specify leg length in minutes if the pilot requests it or you consider it necessary.	No Change
e. Direction of holding pattern turns only if left turns are to be made, the pilot requests it, or you consider it necessary.	No Change

PHRASEOLOGY-

HOLD (direction) **OF** (fix) **ON** (specified radial, course, bearing, airway, azimuth(s), or route.)

If leg length is specified,

(number of minutes/miles) **MINUTE/MILE LEG**.

If direction of turn is specified,

LEFT/RIGHT TURNS.

PHRASEOLOGY-

HOLD (direction) **OF** (fix/waypoint) **ON** (specified radial, course, bearing, track, airway, azimuth(s), or route.)

If leg length is specified,

(number of minutes/miles) **MINUTE/MILE LEG**.

If direction of turn is specified,

LEFT/RIGHT TURNS.

4. OPERATIONAL IMPACT: This change will allow GPS equipped aircraft to hold using GPS tracks.

1. PARAGRAPH NUMBER AND TITLE: 5-1-2. **ALIGNMENT CHECK**

2. BACKGROUND: Adds the requirement to check the accuracy of the radar video display for digitized radar systems.

3. CHANGE:

OLD

5-1-2. ALIGNMENT CHECK

Title through **REFERENCE**

TERMINAL

a. Check the alignment of the radar video display by assuring that the video map or overlay is properly aligned with a permanent target of known range and azimuth on the radar display. Where possible, check one permanent target per quadrant.

b. Map alignment shall be verified for digitized radar systems by using the moving target indicator (MTI) reflectors, fixed location beacon transponders (Parrots), beacon real-time quality control (RTQC) symbols or calibration performance monitor equipment (CPME) beacon targets.

NEW

5-1-2. ALIGNMENT ACCURACY CHECK

No Change

TERMINAL

a. Check the alignment of the radar video display by assuring that the video/digital map or overlay is properly aligned with a permanent target of known range and azimuth on the radar display. Where possible, check one permanent target per quadrant.

b. Accuracy of the radar video display shall be verified for digitized radar systems by using the moving target indicator (MTI) reflectors, fixed location beacon transponders (Parrots), beacon real-time quality control (RTQC) symbols or calibration performance monitor equipment (CPME) beacon targets.

4. OPERATIONAL IMPACT: None.

1. PARAGRAPH NUMBER AND TITLE: 5-5-2. **TARGET SEPARATION**

2. BACKGROUND: Due to the advent of new terminal automation systems, such as Standard Terminal Automation Replacement System (STARS) and ARTS Color Display (ACD), the digital displays will be using digitized targets.

3. CHANGE:**OLD****5-5-2. TARGET SEPARATION**

Apply radar separation:

a. Between the centers of primary radar targets; however, do not allow a primary target to touch another primary target or a beacon control slash.

b. Between the ends of beacon control slashes.

NOTE-

At TPX-42 sites, the bracket video feature must be activated to display the beacon control slash.

c. Between the end of a beacon control slash and the center of a primary target.

d. All-digital displays. Between the centers of digitized targets. Do not allow targets to touch.

NEW**5-5-2. TARGET SEPARATION**

a. Apply radar separation:

1. Between the centers of primary radar targets; however, do not allow a primary target to touch another primary target or a beacon control slash.

2. Between the ends of beacon control slashes.

No Change

3. Between the end of a beacon control slash and the center of a primary target.

4. All-digital displays. Between the centers of digitized targets. Do not allow **digitized** targets to touch.

4. OPERATIONAL IMPACT: None.**1. PARAGRAPH NUMBER AND TITLE:** 5-5-3. MINIMA

2. BACKGROUND: Due to the advent of new terminal automation systems, such as Standard Terminal Automation Replacement System (STARS) and ARTS Color Display (ACD), numerous editorial changes, abbreviations, and new procedures are required.

3. CHANGE:**OLD****5-5-3. MINIMA**

Separate aircraft by the following minima:

NOTE-

Wake turbulence procedures specify increased separation minima required for certain classes of aircraft because of the possible effects of wake turbulence.

a. Broadband Radar System or ASR-9/Full Digital Terminal Radar System:

Add

1. When less than 40 miles from the antenna- 3 miles.

2. When 40 miles or more from the antenna- 5 miles.

EN ROUTE

b. Stage A/DARC and EARTS Mosaic Mode:

NEW**5-5-4. MINIMA**

No Change

No Change

a. Broadband Radar System or Full Digital Terminal Radar System:

NOTE-

1. Includes single sensor long range radar mode.

2. When less than 40 miles from the antenna- 3 miles.

3. When 40 miles or more from the antenna- 5 miles.

EN ROUTE

b. Stage A/DARC, M-EARTS Mosaic Mode, Terminal Mosaic Mode:

NOTE-

Mosaic Mode combines radar input from 3 to 15 sites into a single picture utilizing a mosaic grid composed of radar sort boxes.

1. Below FL 600- 5 miles.

2. At or above FL 600- 10 miles.

3. Within 40 miles of the antenna and below FL 180. Facility directives may specify 3 miles.

Add

Add

Add

Add

Add

NOTE-

Where a significant operational advantage is obtained by modifying a radar site adaptation to single site coverage, facility directives are required to define the areas where 3-mile separation applies.

REFERENCE-

FAAO 7210.3, Single Site Coverage Stage A Operations, Para 8-2-1.

Add

4(a) through 4(d)

c. EARTS Sensor Mode:

NOTE-

1. *Sensor Mode displays information from the radar input of a single site.*

2. *Procedures to convert EARTS Mosaic Mode to EARTS Sensor Mode at each PVD/MDM will be established by facility directive.*

c1 through e3

f. **TERMINAL.** 2.5 nautical miles (NM) separation is authorized between aircraft established on the final approach course within 10 NM of the landing runway when:

1. The leading aircraft's weight class is the same or less than the trailing aircraft;

2. Heavy aircraft and the Boeing 757 are permitted to participate in the separation reduction as the trailing aircraft only;

NOTE-

Mosaic Mode combines radar input from 2 to 16 sites into a single picture utilizing a mosaic grid composed of radar sort boxes.

No Change

No Change

3. For areas meeting all of the following conditions:

(a) Radar site adaptation is set to single sensor.

(b) Significant operational advantages can be obtained.

(c) Within 40 miles of the antenna.

(d) Below FL 180.

(e) Facility directives specifically define the area where the separation can be applied. Facility directives may specify 3 miles.

Delete

REFERENCE-

FAAO 7210.3, Single Site Coverage Stage A Operations, Para 8-2-1.

FAAO 7210.3, Single Site Coverage ATTS Operations, Para 11-8-15.

No Change

c. M-EARTS Sensor Mode:

No Change

2. *Procedures to convert M-EARTS Mosaic Mode to M-EARTS Sensor Mode at each PVD/MDM will be established by facility directive.*

No Change

f. **TERMINAL.** 2.5 nautical miles (NM) separation is authorized between aircraft established on the final approach course within 10 NM of the landing runway when operating in single sensor slant range mode and aircraft remains within 40 miles of the antenna and:

No Change

No Change

3. An average runway occupancy time of 50 seconds or less is documented;

No Change

4. DBRITE/BRITE/TCDD/TDW displays are operational and used for quick glance references;

4. CTRD's are operational and used for quick glance references;

4. OPERATIONAL IMPACT: None.

1. PARAGRAPH NUMBER AND TITLE: 5-5-3. TARGET RESOLUTION

2. BACKGROUND: Due to the advent of new terminal automation systems, such as Standard Terminal Automation Replacement System (STARS) and ARTS Color Display (ACD), new procedures are required.

3. CHANGE:

OLD

NEW

Add

5-5-3. TARGET RESOLUTION

Add

a. A process to ensure that correlated radar targets or digitized targets do not touch.

Add

b. Mandatory traffic advisories and safety alerts shall be issued when this procedure is used.

Add

NOTE-

This procedure shall not be provided utilizing mosaic radar systems.

Add

c. Target resolution shall be applied as follows:

Add

1. Between the edges of two primary targets or the edges of primary digitized targets.

Add

2. Between the end of the beacon control slash and the edge of a primary target or primary digitized target.

Add

3. Between the ends of two beacon control slashes.

4. OPERATIONAL IMPACT: None.

1. PARAGRAPH NUMBER AND TITLE: 7-2-1. VISUAL SEPARATION

2. BACKGROUND: It was determined that paragraph 7-2-1(a) created a misunderstanding of whether visual separation could be applied in Class A airspace.

3. CHANGE:

OLD

NEW

7-2-1. VISUAL SEPARATION

7-2-1. VISUAL SEPARATION

Title through ***REFERENCE-***

No Change

a. *TERMINAL.* Visual separation may be applied between aircraft under the control of the same facility within the terminal area, provided:

a. *TERMINAL.* Visual separation may be applied between aircraft under the control of the same facility within the terminal area **up to but not including FL 180**, provided:

4. OPERATIONAL IMPACT: None.

1. PARAGRAPH NUMBER AND TITLE: 7-4-3. CLEARANCE FOR VISUAL APPROACH

2. BACKGROUND: Pilots landing at a nontowered airport that has an Automated Weather Observing System (AWOS) or an Automated Surface Observing System (ASOS) should monitor the ASOS/AWOS broadcast to ascertain the current weather and advise the controller that they have the weather.

3. CHANGE:**OLD****7-4-3. CLEARANCE FOR VISUAL APPROACH**

Title through a2

b. Resolve potential conflicts with all other aircraft, advise an overtaking aircraft of the distance to the preceding aircraft and speed difference, and ensure that weather conditions at the airport are VFR or that the pilot has been informed that weather is not available for the destination airport. Advise the pilot of the frequency to receive weather information where AWOS/ASOS is available.

PHRASEOLOGY-

(Ident) (instructions) CLEARED VISUAL APPROACH RUNWAY (number);

or

(ident) (instructions) CLEARED VISUAL APPROACH TO (airport name)

(and if appropriate)

**WEATHER NOT AVAILABLE OR AWOS/ASOS
WEATHER AVAILABLE ON FREQUENCY (freq)
MHZ.**

NEW**7-4-3. CLEARANCE FOR VISUAL APPROACH**

No Change

b. Resolve potential conflicts with all other aircraft, advise an overtaking aircraft of the distance to the preceding aircraft and speed difference, and ensure that weather conditions at the airport are VFR or that the pilot has been informed that weather is not available for the destination airport. **Upon pilot request,** advise the pilot of the frequency to receive weather information where AWOS/ASOS is available.

PHRASEOLOGY-

(Ident) (instructions) CLEARED VISUAL APPROACH RUNWAY (number);

or

(ident) (instructions) CLEARED VISUAL APPROACH TO (airport name)

(and if appropriate)

**WEATHER NOT AVAILABLE OR VERIFY THAT
YOU HAVE THE (airport) WEATHER.**

4. OPERATIONAL IMPACT: Minimal.

1. PARAGRAPH NUMBER AND TITLE: 8-5-4. SAME DIRECTION;
FIGURE 8-5-3, TRANSITIONING FROM OFFSHORE TO OCEANIC AIRSPACE; SAME DIRECTION

2. BACKGROUND: Figure 8-5-3 provides a graphic for the separation rule described in paragraph 8-5-4. The current graphic is incorrect and needs to be amended to properly reflect the separation minima allowed. Specifically:

a. Paragraph 8-5-4, subparagraph b, states that a minimum of 5 minutes is maintained between the preceding aircraft and the following aircraft. However, the graphic shows decimal 5, i.e. a half minute.

b. Paragraph 8-5-4, subparagraph c, states the following aircraft is separated by not more than 4,000 feet from the preceding aircraft. The graphic shows a distance of 5,000 feet between aircraft.

3. CHANGE:

OLD

**Transitioning From Offshore to Oceanic Airspace
Same Direction**

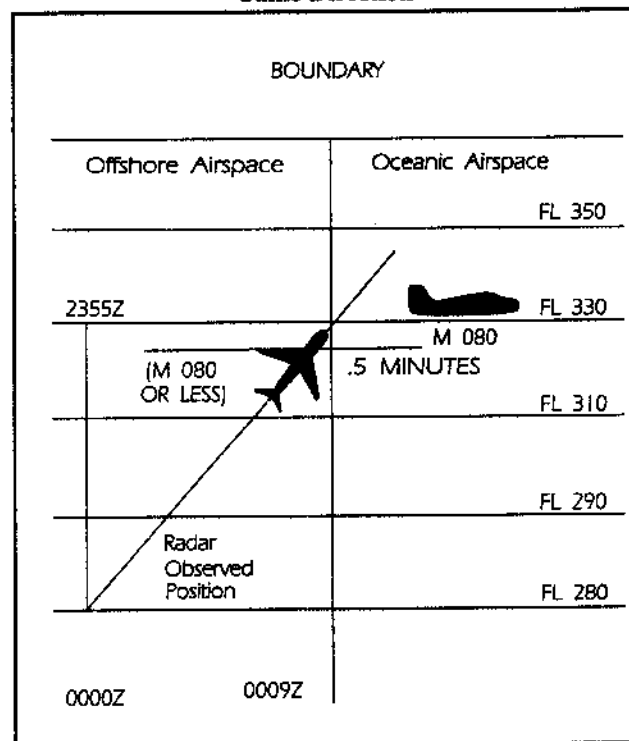


FIG 8-5-3

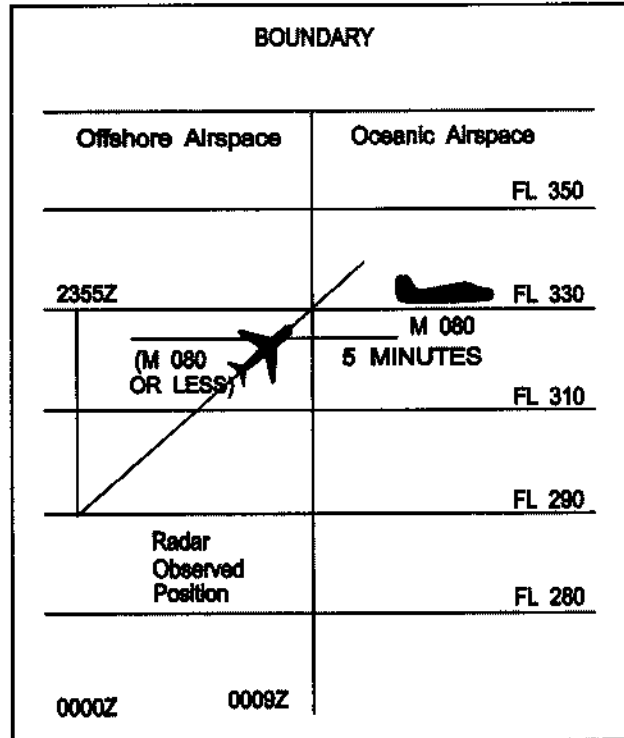
NEW**Transitioning From Offshore to Oceanic Airspace
Same Direction**

FIG 8-5-3

4. OPERATIONAL IMPACT: This change will correct an error presently in FAAO 7110.65.

1. PARAGRAPH NUMBER AND TITLE: 9-4-2. SEPARATION MINIMA

2. BACKGROUND: This incorporates GENOT N7110.224.

3. CHANGE:

OLD**9-4-2. SEPARATION MINIMA**

Title through a **REFERENCE**

b. Provide radar separation of 3 miles (En route Stage A/DARC, or FL 600 and above - 6 miles) from the special use airspace peripheral boundary.

NEW**9-4-2. SEPARATION MINIMA**

No Change

b. Provide radar separation of 3 miles (En route Stage A/DARC, FL 600 and above - 6 miles) from the special use airspace peripheral boundary.

4. OPERATIONAL IMPACT: None.

1. PARAGRAPH NUMBER AND TITLE: 9-4-3. VFR-ON-TOP

2. BACKGROUND: Paragraph 7-1-1, Class A Airspace Restrictions, of the 7110.65 prohibits issuing a VFR-on-top clearance in Class A Airspace.

3. CHANGE:**OLD****9-4-3. VFR-ON-TOP**

If the aircraft's route, track, or altitude may cause it to enter an active Prohibited/Restricted/Warning Area, MOA, or ATCAA:

a. Inform the pilot to conduct flight "VFR-on-top" at least 500 feet ~~(FL 290 and above- 1,000 feet)~~ above the upper limit or ~~below the~~ lower limit of the airspace (subject to para 7-3-1, VFR-on-top); or

PHRASEOLOGY-

MAINTAIN VFR-ON-TOP AT LEAST 500 FEET ~~(FL 290 and above- 1,000 feet)~~ ABOVE/BELOW (upper/lower limit of airspace) ACROSS (name or number of airspace) BETWEEN (fix) AND (fix);

and if the airspace is an ATCAA,

(name of ATCAA) IS ATC ASSIGNED AIRSPACE.

Add

NEW**9-4-3. VFR-ON-TOP**

No Change

a. Inform the pilot to conduct flight "VFR-on-top" at least 500 feet above the upper limit or lower limit of the airspace (subject to para 7-3-1, VFR-on-top); or

PHRASEOLOGY-

MAINTAIN VFR-ON-TOP AT LEAST 500 FEET ABOVE/BELOW (upper/lower limit of airspace) ACROSS (name or number of airspace) BETWEEN (fix) AND (fix);

and if the airspace is an ATCAA,

(name of ATCAA) IS ATC ASSIGNED AIRSPACE.

REFERENCE-

FAAO 7110.65, Class A Airspace Restrictions, Para 7-1-1.

4. OPERATIONAL IMPACT: None.

1. PARAGRAPH NUMBER AND TITLE: APPENDIX B, AIRCRAFT INFORMATION HELICOPTERS/ROTORCRAFTS

2. BACKGROUND: The H46, H64, and H60 have certificated takeoff weights between 12,500 and 41,000 lbs, which place these helicopters in the S+ weight class.

3. CHANGE:

OLD

BOEING VERTOL COMPANY (USA)

(Also BOEING HELICOPTERS, KAWASAKI, MERIDIONAL, VERTOL)

Model	Type Designator	Description	Performance Information		
		Number & Type Engines/Weight Class	Climb Rate (fpm)	Descent Rate (fpm)	SRS Cat.
Sea Knight 107, CH-113, Labrador	H46	2T/L	2,130	2,130	I

NEW

BOEING VERTOL COMPANY (USA)

(Also BOEING HELICOPTERS, KAWASAKI, MERIDIONAL, VERTOL)

Model	Type Designator	Description	Performance Information		
		Number & Type Engines/Weight Class	Climb Rate (fpm)	Descent Rate (fpm)	SRS Cat.
Sea Knight 107, CH-113, Labrador	H46	2T/S+	2,130	2,130	I

OLD

KAWASAKI HEAVY INDUSTRIES LTD. (Japan)

(Also BOEING VERTOL, VERTOL)

Model	Type Designator	Description	Performance Information		
		Number & Type Engines/Weight Class	Climb Rate (fpm)	Descent Rate (fpm)	SRS Cat.
KV-107/II, Sea Knight, Labrador, Voyager, CH-113	H46	2T/L	1,500	1,500	I

NEW

KAWASAKI HEAVY INDUSTRIES LTD. (Japan)

(Also BOEING VERTOL, VERTOL)

Model	Type Designator	Description	Performance Information		
		Number & Type Engines/Weight Class	Climb Rate (fpm)	Descent Rate (fpm)	SRS Cat.
KV-107/II, Sea Knight, Labrador, Voyager, CH-113	H46	2T/S+	1,500	1,500	I

OLD**MCDONNELL-DOUGLAS HELICOPTERS (includes Hughes Helicopters) (USA)**

(Also AGUSTA, BREDANARDI, KAWASAKI, KOREAN AIR, NARDI, RACA, SCHWEIZER)

Model	Type Designator	Description	Performance Information		
		Number & Type Engines/Weight Class	Climb Rate (fpm)	Descent Rate (fpm)	SRS Cat.
Model 77/Apache, Pethen, Longbow Apache	H64	2T/S	1,500	1,500	I

NEW**MCDONNELL-DOUGLAS HELICOPTERS (includes Hughes Helicopters) (USA)**

(Also AGUSTA, BREDANARDI, KAWASAKI, KOREAN AIR, NARDI, RACA, SCHWEIZER)

Model	Type Designator	Description	Performance Information		
		Number & Type Engines/Weight Class	Climb Rate (fpm)	Descent Rate (fpm)	SRS Cat.
Model 77/Apache, Pethen, Longbow Apache	H64	2T/S+	1,500	1,500	I

OLD**SIKORSKY AIRCRAFT (USA)**

(Also AGUSTA, ASTA, HAWKER DE HAVILLAND, HELIPRO, KOREAN AIR, MITSUBISHI, TUSAS, UNITED CANADA, VAT, WESTLAND)

Model	Type Designator	Description	Performance Information		
		Number & Type Engines/Weight Class	Climb Rate (fpm)	Descent Rate (fpm)	SRS Cat.
Blackhawk S-70, WS-70, Seahawk, Pavehawk, Rescuehawk, Thunderhawk, Jayhawk, Oceanhawk, Deserthawk, Yanshuf, LAMPS MK3, Blackhawk	H60	2T/S	2,000	2,000	I

NEW**SIKORSKY AIRCRAFT (USA)**

(Also AGUSTA, ASTA, HAWKER DE HAVILLAND, HELIPRO, KOREAN AIR, MITSUBISHI, TUSAS, UNITED CANADA, VAT, WESTLAND)

Model	Type Designator	Description	Performance Information		
		Number & Type Engines/Weight Class	Climb Rate (fpm)	Descent Rate (fpm)	SRS Cat.
Blackhawk S-70, WS-70, Seahawk, Pavehawk, Rescuehawk, Thunderhawk, Jayhawk, Oceanhawk, Deserthawk, Yanshuf, LAMPS MK3, Blackhawk	H60	2T/S+	2,000	2,000	I

4. OPERATIONAL IMPACT: None.